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ABSTRACT

How students perceive each other in the classroom and how they interact with one another have been variables in teaching which have been relatively ignored. Yet, how students interact with each other affects their learning outcomes and their self-images. To provide additional information and evidence on this variable, a study hypothesized that children who learn cooperatively will not develop a better self-image or think more highly of their peers when compared to their self-image or peer perception prior to cooperative learning. Subjects, 28 New York City sixth grade students of average intelligence and from diverse ethnic backgrounds, were given the "California Test of Personality" before and after the experiment and taught the basic tenets of cooperative learning (positive interdependence, face-to-face interaction, and collaborative skills). Results showed no significant difference was established between the total adjustment of the children in the study from the pretest to the posttest. (Three tables of data are included; 22 references and four appendixes containing pretest and posttest results are attached.) (MS)

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The Relationship of Cooperative Learning to Social Adjustment

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by

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ABSTRACT

This study involved a class of twenty-eight sixth grade students, 15 girls and 13 boys. It was hypothesized that children who learn cooperatively will not develop a better self image or think higher of their peers when compared to their self image or peer perception prior to cooperative learning.

An analysis of the results indicated that no significant difference was established between the total adjustment of the children in the study from the time of the pretest to the postest.

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Since the turn of the century the point of sharpest discussion has been the question of grouping. We have progressed from the ungraded one-room school to the Joplin plan of between class grouping, to the 50's and homogenous groups, to the 60's and individuality, to the 70's and heterogeneous groups and now on to the 80's. Yet, as far back as the 1890's Colonel Parker brought cooperative learning to the Quincy Massachusetts public schools. When he was superintendent (1875-1880) more than 30,000 visitors a year came to observe his use of cooperative learning procedures (Campbell, 1965). Parker's methods of promoting cooperation among students dominated American education through the turn of the century.

Parker's ideas were shelved in the 1930's in favor of the interpersonal competitive movement. In the 1940's we see it emerge again in the research done by Morton Deutsch. The Johnson brothers, David and Richard, working out of Minneapolis Mn. are the forerunners in this field today.

Several groups of researchers and practitioners scattered throughout the United States and Canada and

other countries are engaged in the study and implementation of cooperative learning environments and procedures. At John Hopkins University, the work initiated by DeVries & Edwards, is being extended by Slavin and his colleagues. From Elliot Aronson at the University of Cacifornia to Shlomo Sharan at Tel Aviv University, Israel, cooperative learning programs are being implemented.

Cooperation is as basic to humans as the air we breath. Our very country was built on collaborative efforts. Man from the time of his birth is taught to be a social animal. Marriages, families, careers, friendships, and communities are all founded on the ability to work together. Being able to perform technical skills such as reading, speaking, writing, and listening are valuable but of little use if the person cannot apply those skills in cooperative interaction with other people.

The basic tenets of cooperative learning (an alternative way to group not based on ability) as presented by Johnson & Johnson (1983) are: positive interdependence, face-to-face interacion, and collaborative skills. In the first instance each child is given an assigned role within his group and he is required to discuss and teach his work results to the rest of the group. In the second case, each group member must contribute following certain social behaviors such as sitting knee to knee and looking eye to eye. In the last tenet, the group works towards submitting one group project.

Ruth Parker (1985) has shown that small groups working cooperatively accomplish more and stay on task. In math, their problem solving techniques were enhanced and the entire classroom atmosphere improved. Learning "snowballed". In Macmillan & Leitz's study (1983) one sees how upper-elementary students refine and practice their mathematical language. Small groups working together were able to examine problems more objectively and use new perspectives when exposed to different points of view.

Robert Slavin in "Learning Together" (1987) shows that groups can be structured by the teachers so that competitive as well as cooperative learning can take place. Children talk in "kid language" to each other to get their group to excel. The group then "sinks or swims" together. He states that they grow socially as well as academically.

Involving students in teaching their peers has been around for ages. (Levine) In the ancient religious traditions this type of learning was an important process for the tutor as well as the tutee. In the 1960's this method was used especially for helping the disadvantaged child.

Johnson & Johnson have done many studies showing the effects of cooperative, competitive,and individualistic learning experiences on the relationship between handicapped and non-handicapped students. They found that the former promotes higher self-esteem. A side effect was that these relationships carried over during free-time.

A recent research study undertaken by Cosden Pearl and Bryan (1985) shows that yet additional research is needed to determine conditions under which cooperative learning and all its goal structures would be more successful. They belabor the point that different group compositions (size, age, sex) and their attitudes towards success and failure may influence the results of the research. On the other hand, studies done by Okebukola (1986) and Bruffee (1987) indicate that this method is conducive to the study of science in the laboratory.

How students perceive each other in the classroom and how they interract with one another have been variables in teaching which have been relatively ignored. Yet, how students interract with each other effects their learning outcomes and their self images. To provide additional information and evidence on this variable, a study has been undertaken by this researcher.

Hypothesis

It was hypothesized that children who learn cooperatively will not develop a better self image or think higher of their peers when compared to their self image or peer perception prior to cooperative learning.

Instructional Procedures and Sample

At the beginning of the school year, one class of average sixth graders was chosen to participate in this survey with the cooperation of the principal. Parents of the twenty-eight participants (15 girls and 13 boys) were contacted for permission and were also informed that their child was to take part in a survey for a graduate school research project and in no way

would it have any bearing on their school grades. The information gathered from this survey would not even contain their child's name.

The sample used was from an inner-city school consisting of children from many divergent ethnic backgrounds. At the time of the initial testing in October, the children ranged from 11.4 months to 12.6 months of age. All the children involved had been in this country for at least three years although they had not all attended this same school. The 28 children were of average intelligence, that is average for a New York City School where reading scores ranged from a fourth grade level to a seventh or eighth grade level. (Once a child is in the 90th percentile range from the Degrees of Reading Power Test, (D.R.P.) an exact grade score cannot be ascertained). All the children came from homes identified as low socio-economic status. (School selected is a Title I school and 24 of the 28 children receive free lunch and the other four get reduced-price lunch).

Specific Procedures

In the first week of October each child was given the California Test of Personality (Elementary form AA) and they were given the same test in the last week of January. After administration of the first test they were arbitrarily assigned to cooperative learning samples in the area of Social Studies. Three lessons per week were given to each of these seven groups consisting of four children each. The children were taught the basic tenets of cooperative learning. They included: positive

interdependence, face-to-face interaction, and collaborative skills.

Results

Table I illustrates the findings in respect to personal

Table I

Personal Adjustment Mean, Standard Deviation, & t

Sample (28)	Mean	Standard Deviation	t
Pretest	33.75	19.70	.65 NS
Postest	37.14	19.60	

adjustment. As can be seen, less than four points separate the means, with the standard deviation being almost equal. This t of .65 is non significant.

Table II shows the findings is respect to social

Table II

Social Adjustment Mean, Standard Deviation, & t

Sample (28)	Mean	Standard Deviation	t
Pretest	24.07	18.19	2.25
Postest	36.96	24.28	

adjustment. The data shows a marked increase (almost 13 points) in over-all social adjustment, which contrasts with the smaller increase of six points in the standard deviation.

The results of Table III is clearly in line with the

Table III

Total Adjustment (Personal & Social) Mean, S.D. & t

Sample (28)	Mean	Standard Deviation	t
Pretest	28.57	18.75	1.57
Postest	36.79	20.38	

other two tables since it represents a combination of them. Although a significant difference was not reached, there was a notable difference in scores from the pretest to the postest.

Conclusions

The results of this research conducted in the field of cooperative learning indicate that no significant difference was established between the total adjustment of the children in the study from the pretest to the postest. However, if time had allowed for this project to continue beyond the fifteen week time limit, this researcher is of the opinion that a substantial significant difference would be established since a change of over eight (8) points occurred in this relatively short period.

Although not formally tabulated, a side result of this project was an increase in test marks on the examinations taken in a cooperative manner when compared to those taken individually.

COOPERATIVE LEARNING & SOCIAL ADJUSTMENT:

RELATED RESEARCH

Three years ago, Richard Anderson director of The Center For The Study of Reading at the University of Illinois, released a report called Becoming a Nation of Readers. In an interview with C H Goddard he discussed the report's impact and offered specific advice for teachers who want to put current knowledge about reading into practice in their classrooms. He stated that a major problem teacher's have in teaching reading is the way instruction is organized. He says that a solution to this is the use of cooperative learning groups where children work together on projects and help each other.

With so much to do and so little time to do it, research done by Casanova and Berliner suggests a great way to make the most use out of instruction time. The former did a study with very young children and showed that collaborative learning can be effective and efficient. She first selected the task and then paired appropriate partners who differed in their ability to perform. This brought children with different backgrounds together. She found that these tasks generated conversation and reduced linguistic differences in the classroom. Although these children were only five year olds they learned to take responsibility for another child's learning and to see learning as a joint enterprise.

Berliner reported on a research project done by Azmitia. She worked with forty five-year-olds in three experimental groups. In the first, high and low-ability children worked alone at block building tasks; in the second, students were paired homogeneously but worked on their constructions independently; in the third she paired low-and high-ability children, but also had them work individually. She found that high-ability children did well regard-

less of work setting. They clearly didn't suffer from being paired with low-ability children. Less able children working alone showed no gains. Low-ability children working with more able pairs totaled a 78 percent gain when tested again. It seems that this social interaction improves performance on at least some subtests of commonly used measures of intelligence.(Wechsler preschool intelligence scale for block designs,WPPSI) This research clearly demonstrates that two heads or more are certainly better than one if the groups vary in intelligence.

Numbers of new tutoring projects have sprung up recently. According to M. Levine we have rediscovered the value of peer tutors, an ancient instructional method-not as a means of monitoring students but as an effective way of improving learning in our schools. Research has shown that this is beneficial to the tutor as well as the tutee. In two San Antonio school districts children identified as being high risk (absenteeism, underachievement in basic skills, poor school performance, and a deteriorating self-image) students were selected to tutor elementary children. It seemed that their new job as tutor spilled over into their own performances as students. This is just one of five city projects targeted at the Hispanic youth. This collaborative learning is a source of improved self-esteem and an incentive for high risk students to learn so that they can help others learn. This program permits small group instruction and involves all students regardless of ability.

Teachers today more than ever before are faced with students who possess a wide range of academic and linguistic skills in

their classes. This is particularly true of those schools serving children from lower socioeconomic backgrounds. Cohen and Benton in their research have reported that teachers have met this dilemma of groupwork by using the cooperative learning group format. They state that at the secondary level research evidence gives no support that tracking or ability grouping adds to an increased performance. An alternative strategy to this is the use of heterogeneous groups that are trained to use the resources of all its members. This requires a different type of classroom arrangement for management, a clear set of directions for the task and small groups having one task to complete together. In their studies they have come to the conclusion that the potential benefits of groupwork are enormous but only if there is careful planning beforehand.

Cooperative learning is also conducive to the present day science teaching environment of facility shortage, large classes and low science teacher/student ratio.(Okebukola) He conducted an experiement with ninth graders in two different junior high schools.(113 and 108 boys and girls) Students were informed that their goal was to learn together;share and help each other understand the material; work togehter cooperatively as a group on common tasks based on lesson objectives. As was shown in his table, experimental group subjects had a significantly more favorable attitude toward laboratory work in comparison with subjects in the control group. His study provided evidence that if improving students' attitudes towards laboratory work is the goal than cooperative learning may be the means.

In a recent interview with William Glasser (author of Control Theory in the Classroom) he suggests specific means by which secondary schools can motivate students more effectively. In his interview with Pauline Gough (Phi Delta Kappan) he stated that as a society we don't understand that students will not work in a classroom that doesn't satisfy their needs. The student needs a sense of belonging and of being involved. They want to be listened to, hence the cause of many discipline problems at the secondary level. He says that learning in teams or groups is the answer because each has a chance to contribute. His whole idea of a control-theory school is that students spend more time working together and the teacher's job is to set up things so that the students want to learn. In his kind of school the child would be better prepared for his future role as a member of society. He will not only be learning but also having all his needs satisfied.

Even at the college and university level we see the use of cooperative or collaborative learning. Bruffee states that this type of learning challenges the traditional view of the teacher's authority, and helps prepare students for effective interdependence. Although there is not much research done at this level (Johnson and Sharon) students learn better through non-competitive collaborative group work. He even went so far as to say that at Harvard Medical School 25 percent of each entering class currently studies in this type of group, bypassing systematic lecture courses almost entirely. He cites Abercombie's book,Anatomy of Judgement and shows that medical students in diagnosis as well as in medical judgment, learn more quickly and accurately when in a group.

Instructors at this level (college and university) are really preparing their students for the 'real world'. They are preparing them to enter law, medicine, architecture, banking, engineering, science, etc. -any field that depends on interdependence consultation for excellence.

Lawrence Sherman associate professor of educational psychology stated that cooperation can be practiced in any classroom not just at the university level as easily as in the corporation. Business has been using group dynamics for years and its about time we seriously use it in the classroom.

Robert Slavin an educational researcher on elementary and middle schools at John Hopkins University, did many research articles on cooperative learning. In his review of between-class grouping he says that its effect on achievement is essentially zero at the elementary level and very slight at the secondary level. While assigning students to high and low ability classes typically has a minimal impact on class heterogeneity, it may have a stigmatizing effect on low achievers, may evoke low achievement, and may reduce self esteem. He concludes that the broader use of cooperative learniing methods that view student heterogeneity as a resource rather than a liability should be used as a grouping strategy. He goes even further in "Learning Together" and states that cooperative groups and peer tutoring produce significant academic gains. In this method, (STAD) Student Teams Achievement Divisiions, students want to succeed as a team, they encourage their teammates to excel and help them to do so. Often students

can do an outstanding job of explaining difficult ideas to one another by translating the teacher's language into "kid" language. Thirty-five studies lasting from four to thirty weeks compared achievement in this type of cooperative learning method to that in traditional control groups. Thirty (86%) of these studies have found significantly higher achievement for the STAD groups. Another positive effect of this program is improved student attitudes towards classmates, particularly those from different ethnic backgrounds.

In the late 1970's a masterpiece of legislation, Public Law 94-142 was passed to aid in the education of the handicapped child. Many comparisons were initiated by the Johnson Brothers and later followed by Cosdn,Pearl,Bryan,Warring,Maryuma and others to see the effects of cooperative learning on the handicapped child. Mainstreaming is based on the assumption that when handicapped students are placed in the regular classroom, constructive relationships will form between handicapped and nonhandicapped students. According to these researchers many educators and psychologists have reservations about the efficacy of mainstreaming. They tend to feel that classroom interventions are needed and that students must be put into groups where they can interact with each other in constructive and positive ways.

In the Johnson & Johnson study fifty-nine students participated in two instructional units for 60 minutes a day for 15 days. Behavorial measures were taken for cross-handicap interaction during instruction and daily free-time periods. They found that in the cooperative learning groups more interpersonal attraction

and higher self-esteem was noted than in the groups structured competitively. In another study done with first graders in Vermont and with two other studies done with seventh graders and ninth graders the results were the same. Group contingencies compared with individual contingencies promote higher achievement, more appropriate classroom behavior, greater social acceptance by non-handicapped peers, and higher self-esteem. (In these studies, only 14,9,and 11 children were used) I question whether these results would have been the same if done in inner-city schools involving hundreds of children.

The studies done by Cosden,Pearl and Bryan indicate that the benefits claimed for cooperative goal structures may not always be forthcoming, but will vary as a function of student and partner characteristics. Under some conditions participation in a cooperative group may actually undermine academic performance and the respect that students feel for one another. Additional studies are needed to determine the conditions under which cooperative goal structures would be more successful in promoting academic and interpersonal improvements with heterogeneous groups of learning disabled and nondisabled students. Future research should put more light on the promises and risks of this technique in mainstreamed classrooms.

Ruth Parker in a recent NASSP Bulletin states that although cooperative learning can improve academic and social gains, it is important that the teaching staff and the principal alike take an active role in its implementation ; therefore,the need for in-service training. Change in any educational practices takes

considerable time and is the result of systematic, long-range staff development. Teachers need support of others on the staff and direction from the principal and his help while trying to implement this strategy. Small group cooperative learning necessitates a significant role change for students and teachers as well. She says that learning 'snowballs' when classmates ask questions of their peers. In fact some students who were reluctant to ever participate now do so automatically to be a part of the group. By handing in just one assignment per group, the students justify their thinking (all have to sign the end result) and explain problems to each other. This also reduces the number of papers the teacher has to mark. By using this technique and having proper staff development, the classroom can become a place where it is safe to make mistakes and learn from those mistakes. It can also provide opportunities for students to do new things.

According to some of the latest educational research reports, our country is faced with poor reading performance due to a lack of comprehension. Debbra Uttero, a specialist in reading with the New Hampshire public schools states that comprehension can be activated through use of cooperative learning. While working as a reading specialist she created a teaching model that develops reading comprehension and learning strategies through cooperative learning. It is intended for intermediate grade classrooms in content area lessons. First activate their prior knowledge. If this is substantial comprehension will occur with relative ease. The three phases of this model are:Connection(relate new

information to prior schema), Guided Independent Reading (different strategies to direct and focus their attention on the text), and Follow Up (extension of ideas). She reports that students not only learn but enjoy learning in groups and their comprehension increases. She even gives guidelines for the teacher to use in implementing this strategy. Some of them are: organize the groups, describe the task, model the strategies (Robinson's SQ3R, summarize, categorize, note-taking), gradually release the responsibility for the planning and execution of the tasks to the students. Although no particular studies were cited for inference, one can conclude from her overall research that if her model is followed, children will have less difficulty understanding and recalling information in content area textbooks.

One teacher, Roy Smith went so far as to say that after 22 years of teaching junior high school English his entire outlook on teaching changed after learning about this strategy. He is a strong advocate of cooperative learning for many reasons. First, according to him it puts the responsibility for learning where it belongs: on the students. Second, it increases achievement. Third, it improves students' attitudes toward school,learning and classmates. Fourth, it makes both teaching and learning fun. In order for this to work, children need constant feedback as to how they are doing and they must realize that the group will sink or swim together. Work, material, and ideas are all shared. Social skills are practiced and identified for every lesson. Students are given situations in which they can practice these skills. The teacher as well as the students benefit and learn.

Macmillan and Leitz found in their work with upper elementary aged children that organizing the class into three and four member groups that are trained to work cooperatively can provide an instructional setting effective for improving students' problem solving skills.. Children's thinking and insight are stimulated by explaining their solution processes to others as well as by the ideas and questions offered within the group. They learn to examine a problem more objectively and begin to use new perspectives when exposed to different points of view. Students get a chance to refine and practice their mathematical language.

Several studies by Slavin involving problem solving found that children spend more time on task when they work in small groups than they do when they work individually. But, he also states that the task must be clear and specific. And children need time to discuss information that is peripheral to the problem itself. Slavin's study consisted of third thru sixth graders. The control groups worked independently and the others worked in teams of 4-5 children. (Teams Assisted Individualizaion) After a certain period of time it was found that the TAI gained two times the grade equivalence as the control classes on a standardized mathematics test. There were also many side effects: improved self-esteem in math, liking for math, acceptance of mainstreamed students, improved race relations, and the more able students were not held back by the low achievers. The teams were also encouraged to use each other for aide and to rely on the teacher last. He also ends by stating that in order for cooperative learning to work the group must be trained.

There was until recently an absence of large scale studies that examine and correlate the attitudes of cooperativeness and competitiveness in a natural school setting without manipulating current school practice. This was the only large scale research study to be found. The instrument developed by Johnson and Ahlgren MSAA (Minnesota School Affect Assessment) was administered to the entire school population of over 6,000 students in a midwestern school district. This system includes both suburban and rural white, middle and upperclass students who scored in the 60th percentile on national achievement tests. Two forms of this instrument were developed; one for kindergarten through third grade, and the other for grades four through twelve.

This study examined the relationship between student attitudes toward cooperation and competition and their attitudes toward 1) relationships between school personnel, 2) motivation to learn, 3) relationships with other children, 4) involvement in learning activities, 5) personal worth as a student,and 6) restraints on student behavior. While this study corroborates previous findings that cooperation may result in more positive outcomes than does competition, there is no conclusive evidence that competition produces negative attitudes towards 1-6 above stated relationships. This study was strictly correlational and cannot indicate causality.

This research has come full circle and examined studies

involving cooperative learning from kindergarten through the elementary grades through the secondary school and through the college and university years. Where is all this leading? What is the impact of cooperative learning on the future of America? David Rockerfeller asks similar questions in his remarks before the American Center for International Leadership. He states that our very survival and prosperity dependpends increasingly on education, ideals and leadership-qualities sorely neglected today. Our nation was founded by people who went out of their way to help each other. Cooperation for the common good made us strong but, today, if we only emphasize individual satisfaction and competition, where will our future leaders come from? How will they learn leadership qualities? Today's complex world makes character and humanistic values more important than ever before. Future research just may prove that children who learn cooperatively may possess the qualities that will make for leadership in the year 2000.

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APPENDICES

Appendix A

Dear Parents,

I am involved in a study to compile information for a special report. I need your permission to allow your child to participate in this study.

The information gathered will NOT contain your child's name. Each student will be assigned a number. The information is a questionaire on what your child thinks about himself or herself.

I hope I can count on your cooperation.

Thank you,

Mrs. J. Lisnow

I give my child _____permission to participate in the study.

Signed_____

Appendix B

Student Number	Personal Adjustment	
	Pretest %	Postest %
1	70	70
2	20	20
3	20	20
4	20	20
5	40	70
6	50	40
7	50	60
8	5	20
9	30	30
10	50	70
11	50	50
12	80	70
13	30	40
14	30	40
15	30	40
16	20	30
17	50	50
18	5	10
19	60	40
20	20	20
21	50	50
22	20	20
23	50	60
24	10	10
25	30	30
26	5	10
27	30	30
28	20	20

Appendix C

Student Number	Social Adjustment	
	Pretest %	Postest %
1	2	30
2	30	30
3	5	20
4	10	30
5	30	30
6	20	30
7	30	30
8	5	10
9	30	40
10	5	5
11	30	40
12	5	10
13	20	30
14	40	40
15	50	95
16	10	10
17	5	5
18	5	30
19	40	70
20	30	50
21	50	90
22	10	30
23	20	20
24	50	50
25	30	40
26	70	90
27	2	30
28	40	50

Appendix D

Student Number	Total Adjustment	
	Pretest %	Postest %
1	60	90
2	10	20
3	10	10
4	10	30
5	40	70
6	40	40
7	50	70
8	10	20
9	30	30
10	50	60
11	40	40
12	80	80
13	10	30
14	40	40
15	10	30
16	20	30
17	30	40
18	5	20
19	40	30
20	20	30
21	40	40
22	10	20
23	40	40
24	10	10
25	30	40
26	5	10
27	30	30
28	30	30